

Time.	Volts.		Remarks.
P. M.	Plus.	Minus.	
4.17 00	2400		Thunder heard.
4.18 00	600		
4.19 00	2000		
4.19 10	1500	1200	
4.19 30	00		Thunder heard.
4.20 00		900	
4.21 00	1800		
4.23 00	3900		
4.24 00	2400		Rain diminishing.
4.24 15	2100	2700	
4.24 30			Thunder heard.
4.25 00	2700		
4.26 00	300		
4.27 00		300	Raining hard.
4.28 00		1080	
4.29 00		750	Clearing.
4.30 00	1500		
4.31 00	300		Rain ended.
4.32 00		450	
4.33 00	210		

OPTICAL PHENOMENA.

SOLAR HALOS.

Solar halos were observed in the various states and territories, as follows:

- Alabama.*—Mobile, 2d.
Arizona.—Yuma, 5th, 28th; Prescott, 28th.
California.—San Diego, 1st, 6th, 8th, 11th, 28th.
Colorado.—Montrose, 22d.
Florida.—Archer, 1st, 31st; Key West, 26th, 28th.
Georgia.—Savannah, 29th, 31st.
Illinois.—Pekin, 1st, 23d, 29th; Riley, 3d, 6th, 9th, 19th.
Indiana.—Indianapolis, 3d; Vevay, 5th, 21st.
Iowa.—Corydon, 9th; Cedar Rapids, 18th.
Kansas.—Manhattan, 5th, 17th; Yates Centre, 8th, 20th; Wyandotte, 23d, 24th, 26th, 29th, 30th, 31st.
Maine.—Orono, 16th.
Massachusetts.—Blue Hill Observatory, 4th; Provincetown, 16th.
Michigan.—Port Huron, 1st, 20th; Grand Haven, 11th.
Nebraska.—Omaha, 8th.
New Jersey.—Dover, 12th; Clayton, 13th, 24th.
New York.—Oswego, 4th, 5th.
North Carolina.—New River Inlet, 27th, 30th.
Ohio.—Wauseon, 11th, 19th, 20th, 21st.
Pennsylvania.—Erie, 9th; East Brook, 22d.
South Carolina.—Stateburg, 6th, 8th, 11th, 24th; Spartanburg, 31st.
Tennessee.—Nashville, 16th, 17th.
Texas.—Galveston, 2d.
Vermont.—Strafford, 16th.
Virginia.—Variety Mills, 3d, 6th, 24th; Dale Enterprise, 3d, 11th, 21st; Lynchburg, 17th, 19th, 20th, 25th; Rappahannock Station, 21st.
Wyoming.—Fort Bridger, 2d, 30th.

LUNAR HALOS.

Lunar halos were observed in the various states and territories, as follows:

- Arizona.*—Yuma, 4th, 10th, 11th, 12th.
California.—Sacramento, 17th.
Connecticut.—New Haven, 11th, 17th.
District of Columbia.—Washington City, 7th, 9th, 11th.
Florida.—Archer, 5th, 8th, 9th, 14th, 15th; Jacksonville, 8th, 15th; Key West, 10th, 15th; Limona, 13th; Manatee, 12th, 14th.
Georgia.—Augusta, 6th, 24th; Savannah, 15th.
Illinois.—Pekin, 5th, 9th, 11th, 20th; Riley, 8th, 18th.
Indiana.—Lafayette, 9th.
Iowa.—Independence, 5th, 15th; Cedar Rapids, 19th.

Kansas.—Dodge City and Yates Centre, 8th; Allison and Westmoreland, 10th; Independence, 11th; Wyandotte, 20th.
Kentucky.—Louisville, 10th; Frankfort, 12th, 16th.

Maryland.—Baltimore, 12th.

Michigan.—Lansing, 8th.

Nebraska.—De Soto, 8th, 15th.

New Hampshire.—Nashua, 14th.

New Jersey.—Beverly and Egg Harbor City, 11th; Moorestown, 13th.

New Mexico.—Fort Stanton, 6th, 11th.

New York.—Setauket, 6th, 13th; Ithaca, 9th.

North Carolina.—New River Inlet, 13th; Fort Macon, 17th.

Ohio.—Elyria, 4th; Columbus, 12th to 15th; Napoleon, 13th.

Pennsylvania.—Catawissa, 13th; Pittsburg, 20th.

South Carolina.—Stateburg, 8th, 13th; Spartanburg, 10th, 12th, 14th, 17th, 18th.

Tennessee.—Nashville, 12th, 13th; Chattanooga, 18th; Ashwood, 19th.

Texas.—Cleburne, 3d; Palestine, 5th, 10th; Brownsville and Rio Grande City, 10th.

Virginia.—Dale Enterprise, 7th, 10th, 11th, 20th; Rappahannock Station, 9th to 13th, 15th; Bird's Nest, 9th, 12th, 13th, 15th, 17th; Cape Henry, 13th.

Washington Territory.—Neah Bay, 7th; Tatoosh Island, 8th.

West Virginia.—Parkersburg, 12th.

Wisconsin.—Milwaukee, 12th; Manitowoc, 15th.

Wyoming.—Fort Bridger, 7th.

The phases of the moon (Washington mean time) during August, as given in "The American Ephemeris and Nautical Almanac" for 1886, are as follows: New moon, 28th, 19 h. 46.1 m.; first quarter, 6th, 3 h. 58.0 m.; full moon, 14th, 1 h. 16.0 m.; last quarter, 22d, 2 h. 33.6 m.; apogee, 14th, 20.6 h.; perigee, 28th, 19.9 h.

MIRAGE.

Nicolaus, Sutter county, California: a mirage occurred here on the 9th, distant houses being plainly seen elevated above their usual position.

The following is from the "New York Herald" of August 14, 1886:

The phenomenon known as mirage was witnessed at 7 a. m. of the 12th at Rondout, New York. In the foreground cattle were seen lazily chewing their fodder, while close by were the farmer's house, barn, and other out-buildings. In the background the picture of a pretty rural scene was presented to the eye. The atmosphere was murky. The spectacle, which was viewed by a number of well known citizens, is said to have been the first of the kind seen in Ulster county within the memory of the oldest inhabitant.

Mirage was observed at other stations, as follows:

Webster, Dakota, 17th, 20th, 21st, 30th, 31st.

Salina, Kansas, 22d, 24th, 26th.

Egg Harbor City, New Jersey, 24th.

MISCELLANEOUS PHENOMENA.

DROUGHT.

Lead Hill, Boone county, Arkansas: very warm weather prevailed from the 12th to the 18th, with dry wind from the southwest, which, combined with the drought, was very damaging to vegetation.

Keokuk, Iowa, 31st: the corn crop on uplands is almost ruined by the drought, although copious rains fell from the 11th to the 18th. These rains were of benefit only to corn that had been planted late in bottom lands.

Fort Sill, Indian Territory: on the afternoon of the 19th a thunder-storm and heavy rain set in. This was the second heavy rain since the beginning of the drought, April 26th, and the prospects for cattle grazing were somewhat brightened. During this storm 1.53 inches of rain fell.

Mackinaw City, Michigan: heavy rain fell on the 21st and 22d, breaking the drought that had continued since the middle of June. Owing to the drought the hay and grain crops have been seriously injured, and mills using water as a power were obliged to cease operations early in July on account of the low water in streams.

Milwaukee, Wisconsin: on the 21st the severe drought which